

**CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM  
STATEMENT OF INVESTMENT POLICY**

**FOR  
DOLLAR-DENOMINATED FIXED INCOME PROGRAM**

~~December 14, 2007~~ February 19, 2008

*This Policy is effective immediately upon adoption and supersedes all previous dollar denominated fixed income investment policies.*

**I. PURPOSE**

This document sets forth the investment policy ("the Policy") for Dollar Denominated Fixed Income Program ("the Program"). The design of this Policy ensures that investors, managers, consultants, or other participants selected by the California Public Employees' Retirement System ("the System") take prudent and careful action while managing the Program. Additionally, use of this Policy provides assurance that there is sufficient flexibility in controlling investment risks and returns associated with this segment of the market.

**II. STRATEGIC OBJECTIVE**

Achieving the highest total rate of return possible, consistent with a prudent level of risk and the liabilities of the System is the strategic objective of the Program.

The Program shall be managed to accomplish the following:

- A. Diversify the System's overall investment Program;
- B. Consider solely the interest of the System's participants and their beneficiaries in accordance with California State Law;
- C. Hedge against a long duration accrued liability; and
- D. Enhance the System's total return.

**III. RESPONSIBILITIES AND DELEGATIONS**

- A. The **System's Investment Committee** ("the Investment Committee") is responsible for approving and amending the Policy. The Investment Committee delegates the responsibility for administering the Program to the Investment Staff through the Delegation of Authority (Delegation Nos. 89-13 and 95-50).

- B. The **System's Investment Staff's** ("the Staff") duties include, but are not limited to, the following:
1. Developing and recommending the Policy to the Investment Committee;
  2. Developing and maintaining a procedures manual, subject to periodic reviews and updates, outlining Staff operational procedures used in implementing this Policy;
  3. Implementing and adhering to the Policy;
  4. Auditing the securities trading activities of portfolio managers and traders by the [Senior Investment Officer, Fixed Income](#);
  5. Reporting immediately all violations of the Policy to the [Chief Investment Officer](#) and at the next quarterly report to the Investment Committee with explanations;
  6. Hiring external money managers upon approval or direction of the Investment Committee;
  7. Purchasing only securities outlined in the Policy;
  8. Reporting to the System's Investment Committee at least quarterly about the domestic internal fixed income portfolio characteristics on the following issues:
    - a. Relative duration;
    - b. Sector weightings; and
    - c. An exceptions report that covers Policy violations.
  9. Reporting internally to senior management concerning the implementation of this Policy. This report shall be prepared monthly to include, but is not limited to, the following areas:
    - a. Current market value and allocations by sector compared to the Index;
    - b. Aggregate and individual portfolio characteristics (including duration) compared to guidelines;
    - c. An exceptions report that covers Policy violations.

10. Recommending action with respect to the [external manager\(s\)](#) retained to implement the Program, in accordance with the Policy or with respect to changes in the manager's contractual guidelines, or regarding any other aspect the Staff considers pertinent; and
  11. Reporting to the Investment Committee on the performance of the Program as needed and monitoring implementation of, and compliance with, the Policy.
- C. The **External Manager(s)** ("manager(s)") are responsible for all aspects of portfolio management as set forth in their respective contracts with the System and shall fulfill the following duties:
1. Communicate with the Staff as needed regarding investment strategy and investment results. The manager(s) are expected to monitor, analyze, and evaluate performance relative to the agreed upon benchmark; and
  2. Cooperate fully with the Staff, the System's [custodian](#) and the [General Pension Consultant](#) concerning requests for information.
- D. The **General Pension Consultant** is responsible for monitoring, evaluating, and reporting to the Investment Committee, at least quarterly, about the internally and externally managed fixed income performance relative to the benchmark and Policy guidelines.

#### IV. MANAGER EVALUATION

- A. The ongoing evaluation of investment managers includes both qualitative and quantitative reviews of the firms. Qualitative monitoring involves reviewing the following organizational aspects:
1. Ownership;
  2. Staffing;
  3. Growth;
  4. Client service;
  5. Investment approach;
  6. Business risk; and
  7. Regulatory issues.

B. Quantitative monitoring requires analysis of the implementation of the investment approach:

1. Investment style;
2. Performance; and
3. Portfolio risk.

Staff shall develop and maintain specific ~~watchlist~~watch list criteria detailing the qualitative and quantitative factors to evaluate managers.

When the evaluation and monitoring of managers has deteriorated, and it appears likely to affect long-term overall performance, the manager shall be placed on Watchlist Status or considered for [Dismissal](#).

**[Watchlist Status](#)** – Indicates a level of concern the degree of which shall be unique to each situation and quantified by Staff to the Investment Committee. This level of concern can range from minor to major deficiencies. A recommendation for Watchlist Status shall designate a period of time to assess the capabilities and quality of a Manager's operations and include more frequent contact with the firm to monitor closely the conditions that led to the Watchlist Status. Managers placed on Watchlist Status shall be requested to submit a Plan of Action to address the deficiencies and shall typically remain on Watchlist Status for performance-related issues or organizational changes for up to one year to ensure that outstanding issues are resolved. Managers who do not correct outstanding issues in a timely manner shall be considered for Dismissal.

**Dismissal** – Staff shall recommend Dismissal of a manager if adequate improvement in the areas outlined in the Plan of action has not been made; however, Staff may recommend Dismissal for any reason upon thirty days' notice to the manager.

From time-to-time, managers may not incur Watchlist Status (because performance slightly exceeds the benchmark), but may not have met their performance objective (expected excess return over the benchmark) as specified in their Investment Management Guidelines. In cases where the benchmark return is surpassed, but expected excess return has not been earned during a significant period of time (three years), Staff may recommend Watchlist Status.

## V. PERFORMANCE OBJECTIVE

Exceed the return of the [Lehman Brothers Long Liabilities](#) (LLL Index) Index while maintaining a high level of diversification.

## VI. INVESTMENT APPROACHES AND PARAMETERS

### A. Investment Approach

Staff will identify opportunities across [bond](#) market sectors and invest where risks are both understood and manageable while complying with specifications in this Policy. [Corporate](#), sovereign, and [mortgage-backed securities](#) may receive a greater allocation than the LLL Index given the higher return expectations. Studies indicate that optimal sector allocations in fixed income favor corporate and mortgage-backed securities over U.S. Treasuries and Agencies relative to the Index. These studies, along with the System's low liquidity needs, serve as the foundation for a strategy that sacrifices the quality and liquidity of U.S. Treasuries for higher returning corporates, mortgages, and [sovereigns](#). Low liquidity requirements are derived from the high positive cash flow of the current allocation (when including income from investments). Equally important for management of the Fixed Income Program Portfolio is flexibility in managing durations. In general, the program portfolio is expected to remain duration-neutral to the LLL Index unless real returns and [economic analysis](#) dictate otherwise. This flexibility is expected to add value versus a passive approach.

### B. Specific Risk Parameters

The System shall manage the following major categories of fixed income risk:

1. Benchmark Risk addresses whether the LLL Index is the appropriate reference point for fixed income.
2. Interest Rate Risk is the price volatility produced by changes in the overall level of interest rates as measured by an option-adjusted duration. Duration shall be maintained at  $\pm 20\%$  of the LLL Index on an option-adjusted basis. Decisions shall be managed in a controlled manner using historical [real return relationships](#) and economic analysis.
3. [Yield Curve](#) Risk is the price changes induced by the changing slope of the yield curve. [Yield Curve Risk](#) shall be managed in a controlled, disciplined fashion by monitoring key rate durations and [principal component analysis](#).
4. [Convexity](#) Risk is the downside risk of an equal move up or down in interest rates, causing greater price loss than price gain. Convexity shall be managed using [option-adjusted](#) and [scenario analyses](#).

5. Sector Risk is the risk of holding sectors proportionally different from the LLL Index. Based on the economic outlook, [historical factors](#), and [break-even analysis](#), Staff shall estimate the impact on various sectors' spreads and make allocations accordingly.

Sector Ranges: The following are ranges by which actual allocations can fluctuate from the benchmark sector weightings:

### TOTAL FIXED INCOME PORTFOLIO WEIGHTINGS

| Sector  | LLL Index | <u>Permitted<br/>Sector<br/>Ranges</u> |
|---|-----------|--|
| U.S. Treasury &<br><a href="#">Government Sponsored</a> | 40%       | 0% - 80%                               |
| Mortgage  | 30%       | 10% - 60%                              |
| Corporate   | 24%       | 10% - 50%                              |
| Opportunistic   | 3%        | 0% - 20%                               |
| Sovereign   | 3%        | 0% - 15%                               |
| Total   | 100%      | N.A.                                   |

6. Credit Risk is the uncertainty surrounding the borrower's ability to repay its obligations. Credit risk shall be actively managed on a risk/return basis. A downgrading of a [security](#), which causes a violation of the guidelines, shall not require an immediate sale if the Senior Investment Officer of Fixed Income believes that no further risk of credit deterioration exists or the sale diminishes the total return to the System. The internal research Staff and the external rating agencies shall analyze such situations to ensure that an informed decision is made. The following is the minimum quality for each of the sectors.

a. Treasury & Government Sponsored

~~The minimum weighted-average credit quality shall be AAA rated.~~ Interest rate swaps are allowable and excluded from the minimum credit calculation. All swaps must comply with Section IX.D. of this Policy.

b. Investment Grade Corporate

1. Holdings in the investment grade corporate sector shall, at a minimum, be rated investment grade by a recognized credit rating agency (at least Baa3 by Moody's or BBB- by Standard & Poor's or by Fitch Ratings). This sector includes both domestic and foreign U.S. dollar and hedged into U.S. dollars public utilities, transportation, industrials, and bank and finance companies.
2. Non-rated bonds shall receive an investment grade rating (BBB- or above) from the internal Research Staff at the time of purchase. The internal Research Staff shall review at least annually all corporate issuers, where the investment decision was driven by the attractiveness of the individual issuer. Where the investment in corporate bonds is driven by a favorable macro-view of the corporate sector versus either Treasuries or mortgages, the annual review of issuers shall not apply, as credit risk shall be managed through extensive issue diversification and industry constraints to minimize event and idiosyncratic risk.
3. The corporate sector will include credit mortgages. All credit mortgages shall receive an investment grade credit rating (BBB- or above) from the internal research staff at the time of purchase and the internal Research Staff shall be reviewed them at least annually.
4. Local currency debt of corporations must be rated investment grade, at least BBB- by S&P or Fitch, or Baa3 by Moody's. Even in the case of local currency debt, this requirement must be satisfied by long-term foreign currency ratings instead of local currency ratings. The country must be part of the Lehman Global Aggregate Index. The country's currency must be fully convertible in the spot market for foreign investors. Investment grade Local Currency debt of corporations shall meet the requirements of the Foreign Debt Policy (Attachment A)

## c. Mortgage

1. Holdings in the mortgage sector shall at a~~The minimum be rated investment grade by a recognized credit rating agency (at least Baa3 by Moody's or BBB- by Standard & Poor's or by Fitch) weighted-average credit quality of the mortgage portfolio shall have an AA rating. This category includes mortgage-backed and [asset-backed securities](#). Additionally, it includes commercial mortgages where the primary focus for rating purposes is the underlying collateral and leases.~~

2. Non-rated bonds shall receive an investment grade rating (BBB- or above) from the staff at the time of purchase. Staff shall review each investment at least annually.

d. Sovereign

1. Holdings in the sovereign sector shall at a~~The minimum be rated investment grade by a recognized rating agency (at least Baa3 by Moody's or BBB- by Standard & Poor's or by Fitch Ratings) weighted-average credit quality of the sovereign portfolio shall be investment grade.~~

2. All sovereign securities shall be U.S. dollar-denominated or non-dollar securities hedged into U.S. dollars. All holdings shall meet the requirements of the Foreign Debt Policy (Attachment A).

3. Global bonds issued in major markets by national governments must have a credit rating of BB- or higher from S&P or Fitch, or Ba3 or higher from Moody's.

4. Local currency debt of national governments and subnational governments (i.e., provincial, state, and municipal) must be rated investment grade, at least BBB- by S&P or Fitch, or Baa3 by Moody's. Even in the case of local-currency debt, this requirement must be satisfied by long-term foreign currency ratings instead of local-currency ratings. The country must be part of the Lehman Global Aggregate Index. The country's currency must be fully convertible in the spot market for foreign investors.

7. Structure Risk arises from the options implicit in bonds (e.g., callable and optional sinking fund bonds) or the rules governing cash flow that



differs from expectations. Structure risk shall be managed using option adjusted scenario and [prepayment analysis](#).

8. Reinvestment Risk is the uncertain future yield opportunities for investing funds that become available due to call, maturity, or coupon payments. Reinvestment risk shall be managed through [call risk](#) and cash flow analysis.
9. Liquidity risk is the ease with which an issue or specified amount can be sold at or near prevailing market prices. Considering the System's strong cash flow due to the current allocation, few liquidity constraints on the System exist.
10. Currency Risk is the price volatility emanating from the value of the U.S. dollar relative to other currencies of the world. To eliminate this risk, all securities shall be denominated or hedged into U.S. dollars.

### C. Restrictions and Prohibitions

1. Except for U.S. Treasuries and Agencies, investments in a single [issuer](#) shall not exceed 2% of the **total dollar denominated** Fixed Income ~~Program~~Portfolio during the holding period for such investment. For asset-backed securities, each separate trust (pool of assets) is defined as a separate issuer. For AAA rated mortgage-backed securities, [CalPERS High Quality LIBOR](#), [CalPERS Short Duration Fund](#), and STIF, no single issuer limit exists.
2. ~~Total Non-investment~~ grade securities shall not exceed a maximum of ~~420%~~ 20% of the **total dollar denominated** fixed income ~~program~~portfolio. Sub-sector limits are as follows:
  - 3.a. Non-investment grade corporates securities shall not exceed 15% of the total dollar denominated fixed income program.
  - 4.b. Non-investment grade mortgage securities shall not exceed 10% of the total dollar denominated fixed income program.
  - c. Non-investment grade sovereign securities shall not exceed 5% of the total dollar denominated fixed income program.
- ~~2.3. Option adjusted durations of the total fixed income portfolio must be within 20% of the option adjusted LLL Index duration~~Section VI.B.2 of this Policy specifies the interest rate risk parameters.
4. ~~Part~~Section VI B.5 of this Policy specifies the sector risk parameters~~ranges~~.

5. Non-investment grade collateralized bond, loan, or debt obligations (CBO/CLO/CDO) shall not exceed a maximum of 5% of the total dollar denominated fixed income portfolio.
6. Tobacco company investments are prohibited.
7. Shorting will be limited to investment grade securities. Section IX.A.1 of this Policy governs the short selling of securities

#### D. Authorized Securities

1. U.S. Treasury and Government Sponsored Securities (including derivative securities whose deliverable instrument is a U.S. Treasury or government obligation, but excluding mortgages and mortgage-backed securities (MBS))
2. U.S. Publicly Traded Investment Grade Corporate Bonds;
3. U.S. Privately Placed Investment Grade Corporate Bonds;
4. U.S. Publicly Traded Investment Grade Mortgage-Backed Securities including derivative securities whose deliverable instrument or underlying collateral is a U.S. mortgage-backed security;
5. U.S. Privately Placed Investment Grade Mortgage-Backed Securities including single-family residences, commercial loans, and other privately placed mortgage-backed securities;
6. Investment Grade Asset-Backed Securities;
7. Investment Grade Global bonds;
8. Investment Grade Municipal bonds;
9. Investment Grade Non-Dollar Bonds Hedged into U.S. dollars that are consistent with the Foreign Debt Policy (Attachment A); and
10. Opportunistic Securities pursuant to(see Section X).

#### VII. BENCHMARK

The benchmark for the Program shall be the Lehman Brothers Long Liabilities Index, which was developed by CalPERS and Lehman Brothers to reflect the long liability nature of CalPERS.

## VIII. GENERAL

Investors, managers, consultants, or other participants selected by the System shall make all calculations and computations on a market value basis as recorded by the System's Custodian.

## IX. DERIVATIVES AND LEVERAGE POLICY

### A. Financial Futures, Swaps, and Options

All transactions involving derivatives and leverage are governed by the California Public Employees' Retirement System Statement of Investment Policy for Development of Derivatives Strategies — Investment Office or the California Public Employees Retirement System Statement of Investment Policy for Derivative-External Money Managers (collectively "Derivatives Policies". In addition to the restrictions defined in the Derivatives Policies, the following conditions apply:

1. Short selling of securities is allowed in the following areas: prohibited, except in financial futures (as outlined in Part IX. A. 4. of this Policy);
  - a. Financial futures and investment grade indexes;
  - b. Investment grade corporate securities or derivatives thereon where the actual cash position of any short securities plus the notional value of any derivatives is subject to a maximum limit of 5% of the total dollar denominated fixed income program;
  - c. Investment grade sovereign securities or derivatives thereon where the actual cash position of any short securities plus the notional value of any derivatives is subject to a maximum limit of 5% of the total dollar denominated fixed income program;  
and
  - d. Investment grade mortgage securities or derivatives thereon where the actual cash position of any short securities plus the notional value of any derivatives is subject to a maximum limit of 2% of the total dollar denominated fixed income program.
2. Leverage is prohibited except futures position where there is an associated cash position (which together creates a synthetic bond);
3. The Staff may buy or sell the following fixed income related derivatives: Credit Default sSwaps (both on securities (CDS) and indexes (examples are CDX and ABX), financial futures, options on financial futures, options on volatility, options on underlying securities,

and options on securities indexes, which includes [over-the-counter](#) options (as specified in Part VI. D. 1. of this Policy); and

4. Acceptable strategies include bona fide hedges (to help achieve the target durations or short positions that stay within the duration and sector range parameters set forth in Section VI.B.2 and 5 of this Policy) and strategies that exploit the market's erroneous estimation of the volatility of interest rates. Other acceptable strategies include taking advantage of inaccurately priced instruments or using a more efficient method of implementing the investment objectives of the Portfolio.

B. [Collateralized Mortgage Obligations](#) (CMO)

1. **Philosophy**

CMOs are considered an important strategic tool for fixed income management. They segregate mortgage cash flows into instruments with different risk/return characteristics than the underlying mortgage pools. These instruments shall be purchased when valuations indicate a superior return versus other securities in the fixed income universe. Selected instruments shall generally exhibit positive convexity and superior call protection versus conventional mortgages. They shall only be purchased after performing the appropriate scenario, break-even, option adjusted, and cash flow analyses.

2. **Purpose**

Use of CMOs shall enhance return opportunities and manage risk at appropriate valuation levels while exercising prudence.

C. **Restrictions and Prohibitions**

1. Uncovered call writing is prohibited.
2. ~~Premiums on purchased options on futures may not exceed 1% of the beginning market value of the total fixed income portfolio in any calendar year.~~
32. [Speculation](#) or [arbitrage](#) between two derivatives is prohibited. If a derivative is more attractively priced than the underlying security, the transaction is considered a substitution.
43. A maximum of 3% of the total fixed income portfolio may be invested in mortgage securities that are leveraged (e.g., [inverse floaters](#)).

**D. Counterparty Exposure for Options, Swaps and Futures**

1. The greater of \$500 million or 25 percent of the total notional derivative exposure can be maintained with any one counterparty for non-exchanged-traded derivatives (e.g., swaps, [caps](#), [floors](#), and options).
2. Transactions shall be executed with only domestic or non-U.S. brokers registered in the U.S. or the U.K. who have a short-term debt rating by at least two of the following three rating agencies:

A1 (Standard & Poor's) and P1 (Moody's), or F1 (Fitch Ratings), or rated on a long-term basis A3 (Moody's) A- (Standard & Poor's), or A- (Fitch Ratings Services). The Internal Research Staff shall actively review these brokers.

**X. OPPORTUNISTIC INVESTMENTS**

- A. Securities or sub-asset classes, which are candidates for inclusion, shall have risk, return, and correlation profile sufficiently different from other sectors such that its inclusion or exclusion can affect the risk and return expectations of the Portfolio. The criteria for inclusion into this classification shall include, but are not limited to:
  1. Sufficient size, liquidity, and cost efficiency to allow a meaningful amount to be invested and have an impact on the total return.
  2. Availability of sufficient internal or external investment and technical expertise to insure prudent implementation of an investment in that sub-asset class.
  3. Presence of diversification, return enhancement, or some other readily identifiable attribute which is sufficiently different from other asset classes and which enhances the Fund's ability to achieve the strategic objectives outlined in this Policy.
  4. Acceptance by other large money managers or financial institutions as a viable and meaningful sub-asset class or in the absence of such acceptance, academic basis or foundation for its inclusion.
  5. Availability of sufficient data, and/or history, or expertise to assess the viability or benefit of the asset class to the Fund and to have an investment outcome that is measurable from such an asset class. Further, the asset class must have a basis for developing expected investment return, risk, and correlations for purposes of the financial study.

B. A sub-asset class may be approved for investment provided that it meets the criteria above and that the Senior Investment Officer, Fixed Income has reviewed educational literature and/or other sources to fulfill fiduciary responsibility and has received approval by the Chief Investment Officer.

C. Permitted Opportunistic Investments

1. Domestic and Hedged Non-Dollar non-investment grade cCorporate ~~High-Yield~~, including corporate zero coupon and PIK securities;

2. Leveraged and Un-leveraged Bank Loans;

3. Asset Based Loans;

4. Non-investment grade CBO/CLO securities;

5. Convertible Bonds;

6. CMO residuals;

7. Dollar Denominated and Hedged Non-Dollar Global Sovereign Debt of countries that meet the requirements in the Foreign Debt Policy (Attachment A) ~~with a minimum rating of BB- by S&P or Fitch, or Ba3 by Moody's~~;

8. Non-investment grade mortgage securities

98. Other sub-asset classes may be added if they fit ~~Part~~Section X<sub>2</sub>-A and B.

## XI. GLOSSARY OF TERMS

Definitions for key words used in this policy are located in the Fixed Income Glossary of Terms which is included in the System's Master Glossary of Terms.

|  |                          |
|--|--------------------------|
| Approved by the Policy Subcommittee:         | September 14, 2001       |
| Adopted by the Investment Committee:         | November 13, 2001        |
| Revised by the Policy Subcommittee:          | September 10, 2004       |
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| Revised by the Policy Subcommittee:          | December 14, 2007        |
| <u>Approved by the Investment Committee:</u> | <u>February 19, 2008</u> |

Attachment AForeign Debt PolicyGlobal Debt Issued by National Governments

The policy stipulations for global debt issued in major markets differ somewhat for externally managed holdings denominated in major nondollar currencies and for internally managed holdings denominated in the dollar. The differences are found in the approach to limiting portfolio concentration in emerging markets, while minimum credit rating requirements are the same for both. The stipulations are as follows:

For both externally and internally managed portfolios, global bonds issued by national governments must have a credit rating of BB- or higher from S&P or Fitch, or Ba3 or higher from Moody's.

Local-Currency Debt of Foreign National Governments and All Foreign Debt of Corporations and Subnational Governments (i.e., Provincial, State, and Municipal)

1. Both the issuer and the issuer's national government (if the issuer is not the national government itself) must be rated investment grade, at least BBB- by S&P or Fitch, or Baa3 by Moody's. Even in the case of local-currency debt, this requirement must be satisfied by long-term foreign currency ratings instead of local-currency ratings, which are generally higher because a country can easily print more of its own currency to meet its local debt obligations. This unconventional, very conservative application of the rating requirement will give extra protection against the special foreign-exchange valuation and retrieval risks of local-currency debt.
2. The country must be part of the Lehman Global Aggregate Index, a widely followed index which includes only those local markets that are fairly liquid and fairly well developed.
3. The country's currency must be fully convertible in the spot market for foreign investors, so that managers may retrieve CalPERS' funds without limit or obstruction.

**Arbitrage**

The simultaneous purchase and sale of two instruments for the purpose of capturing a pricing disparity between them. The instruments do not need correlated price movements.

**Asset-Backed Security**

A security collateralized by assets such as automobile loans, agricultural equipment loans, and credit card loans. The loans are securitized by the issuer and usually placed with a trustee.

**Asset-Based Loans**

Secured debt that is loaned to primarily non-investment grade borrowers for mostly working capital, acquisitions, turnarounds, growth financing, debtor-in-possession financing (DIP Financing), exit financing, and corporate recapitalization/reorganizations.

**Bond**

A unit of debt, \$1,000 of principal or par amount. For 200 years municipal bonds were sold in \$1,000 denominations. Since the mid-1970s the minimum bond denomination has been \$5,000; nevertheless, "A Bond" is bought, sold, referred to, and priced as if it were \$1,000.

**Break-Even Analysis**

Uses results from the scenario analysis. Since all projections should be viewed as risky, evaluating the sensitivity of the projected return to adverse market movements is critical. The break-even analysis calculates the movement required to reduce the sector or portfolio returns to a specified level at some horizon. This analysis creates a form of risk/return ratio. The higher the break-even value, the more the cushion against an adverse movement in rates.

**Call Risk Analysis**

Examines the portfolio's callable securities and estimates the amount of principal returned for a given drop in interest rates.

**Caps**

Designed to provide insurance against the rate of interest on a floating rate loan rising above a certain level (known as the cap rate).

**Chief Investment Officer**

Heads the CalPERS Investment Office and works with the Investment Committee to develop a long-term investment policy and asset allocation strategy for the Public Employees' Retirement Fund.



**Collateralized Mortgage Obligation**

A mortgage-backed security that pools together mortgages and separates the cash flows into short, medium, and long classes (often called tranches), allowing a wider range of risk and return characteristics than in the more homogeneous pass-through market.

**Convertible Bond**

A bond that has a provision that permits conversion to the issuer's stock at some fixed ratio.

**Convexity**

The price change from a move in interest rate that cannot be explained by duration only. Positive convexity (when price rises more than expected and falls less) comes at a cost (lower yield). Negative convexity (price rises less than expected and falls more) usually comes with higher yield.

**Corporate**

Securities issued in the U.S. market by U.S. corporations or foreign corporations (Yankee bonds).

**Corporate Sector**

As defined by the System's corporate investment managers in BlackRock Solutions, Aladdin product. Examples of sectors include banking, independent finance, diversified telecom, etc.

**Credit Mortgages**

Defined as loans or securities that are generally backed by lease structures. The primary underwriting analysis and source of repayment are clearly based on the credit-paying ability of the tenant or the borrower directly as opposed to the income-producing ability of the real estate itself.

**Credit Rating**

A current opinion of an obligor's overall financial capacity (its creditworthiness) to pay its financial obligations. This opinion focuses on the obligor's capacity and willingness to meet its financial commitments as they come due. In the case of split ratings, the higher rating of either Moody's, Standard & Poor's, or Fitch Investor Services shall apply.

**Custodian**

A bank or other financial institution that provides custody of stock certificates and other assets of an institutional investor.

**Derivative**

An instrument whose value is based on the performance of an underlying financial asset, index, or other investment. Classes of derivatives include futures contracts, options, currency forward contracts, swaps, and options on futures.

**Dismissal**

Termination of the investment management contract with CalPERS.

**Duration**

A measure of price sensitivity to interest rate changes. Duration is the anticipated percentage move in price given a 100 basis point (1 percent) move in interest rates.

**Economic Analysis**

Examines reference points for indications on what to look for and what events are considered significant in the economy to understand relationships among complex and often seemingly unrelated events. This analysis is used in making decisions concerning duration and sector weightings.

**Eurodollar Bonds**

~~U.S. dollar denominated securities issued in Europe.~~

**Event Risk**

The risk that the credit quality of a bond will drop suddenly because of some event like a takeover.

**External Manager**

An outside money management firm retained under contract by CalPERS.

**Financial Futures**

A contract to trade a financial investment, like a Treasury bond, at a specific price and future date. As interest rates rise or fall, the value of such contract falls or rises respectively.

**Fitch Ratings**

A nationally-recognized credit rating agency that grades the investment quality of bonds in a 10-symbol system. The ranges extend from the highest investment quality, which is AAA, to the lowest credit rating, which is D. Securities rated BBB- or greater are considered investment-grade. Securities rated BB+ or below are considered to be speculative.

**Floors**

Provide insurance against rate of interest on a floating rate loan dropping below a certain level.

**Futures**

Exchange-traded contracts to buy or sell a standard quantity of a given instrument, at an agreed price, and date. A future differs from an option in that both parties are obliged to abide by the transaction. Futures are traded on a range of underlying instruments including commodities, bonds, currencies, and stock indices.

**General Pension Fund Consultant**

An individual or organization that provides specialized professional assistance to the CalPERS Board of Administration in determining the pension fund's asset allocation model or optimal combination of investments in order to maximize risk-adjusted investment returns in a manner consistent with the State's long-term pension liabilities.

**Government Sponsored Securities**

Issuer that benefits from sponsorship with or underlying guarantee from a single or multiple sovereign or regional government entity.

**Hedge (Hedging)**

A strategy used to offset investment risk. A perfect hedge is one eliminating the possibility of future gain or loss.

**High Quality LIBOR**

A limited-duration, highly liquid, LIBOR-based fund managed by CalPERS staff.

**Historical Factors**

A review of past relationships and the environment associated with them to assess the relative investment potential of the current market conditions and relationships.

**Idiosyncratic Risk**

Risk particular to an individual or group of issuers.

**Inverse Floaters**

A derivative instrument with a coupon rate, which cannot go below zero, that moves inversely with an index rate like London Interbank Offer Rate or 11th District Cost of Funds Index, usually with a leverage factor. The higher the leverage factor, the greater the price sensitivity.

**Investment Grade**

A minimum credit rating of Baa3 by Moody's Investor Service or BBB- for Standard & Poor's Corporation, and BBB- by Fitch. Investment grade ratings apply to issuers whose financial risk is relatively low and the probability of future payment relatively high.

**Issuer**

A state or local unit of government that borrows money through the sale of bonds and/or notes.

**Lehman Brothers Long Liability**

A custom index developed by Lehman Brothers composed of dollar-denominated securities issued in the United States with a focus on longer maturity securities that have an issue size of at least \$200 million. The index has fixed weights of 30 percent mortgages, 24 percent investment grade corporates, 3 percent Yankee Sovereigns, 40 percent U.S. governments, and 3 percent high yield. The index is considered appropriate for the System, due to the long nature of the System's liabilities.

**Leverage**

A condition where a portfolio's market obligation may exceed the market-value-adjusted capital commitment by the amount of borrowed capital (debt).

**Leveraged Bank Loans**

Loans made by banks that are typically partially secured by assets and are made to non-investment grade companies with a debt/EBITDA ratio greater than 3.5 and have a spread to LIBOR of greater than 250 basis points.

**LIBOR**

An acronym for London Interbank Offer Rate. These rates are based on rates quoted by 16 (for U.S. dollars) British Bankers' Association designated banks as being in their view, the offered rate at which deposits are being quoted to prime banks in the London Interbank Market at 11:00 a.m. London time. Of the 16 contributors, the four highest and four lowest rates are eliminated. An average of the remaining eight is taken.

**Moody's Investors Service**

A nationally-recognized credit rating agency that grades the investment quality of bonds in a 9-symbol system. The ranges extend from the highest investment quality, which is Aaa, to the lowest credit rating, which is C. Securities rated Baa3 or greater are considered investment grade. Securities rated Ba1 or below are considered to be speculative.

**Mortgage Backed Security (MBS)**

A general term used to describe securities backed by mortgages. MBSs are broken down into four types of securities: mortgage pass-through, mortgage-backed bond, collateralized mortgage obligation (CMO), and stripped mortgage-backed bonds. Mortgage pass-throughs are pooled loans, typically issued by the Government National Mortgage Association, Federal National Mortgage Association, and Federal Home Loan Mortgage Corporation. Mortgage-backed bonds have mortgage loans as collateral, but the term and interest payments are fixed. CMOs are defined above. Stripped mortgage-backed securities have the principal and interest distribution altered from a pro rata distribution to an unequal distribution.

**Municipal Bond**

Bonds issued by any of the 50 states, the territories and their subdivisions, counties, cities, towns, villages and school districts, agencies (such as authorities and special districts created by the states), and certain federally-sponsored agencies (such as local housing authorities). There are two broad groups of municipals: 1) Public Purpose bonds, which remain tax-exempt and can be issued without limitation; and (2) Private Purpose Bonds, which are taxable unless specifically exempted.

**High Yield Non-Investment Grade**

Securities that are rated at or below Ba1 by Moody's, BB+ by Standard & Poor's, and BB+ by Fitch Ratings. These securities are also known as high yield, non-investment grade, speculative, or "junk" bonds.

**Option (on a Fixed Income Security)**

The right or privilege to either buy (call option) or sell (put option) a designated amount of a particular fixed income security or class of securities during a time period ending on the expiration date of the option.

**Option Adjusted Analysis**

A method that strips out embedded options in securities such as callable bonds and mortgage-backed securities, enabling comparisons with other security types within a consistent framework.

**Option Premium**

The amount a seller receives in return for the contingent obligation to sell or buy if the option is exercised.

**Over-the-Counter (OTC)**

The market for securities and traded products that are not listed on the major exchanges. OTC options are options with negotiated premium, strike price, and expiration date.

**PIK (Payment in Kind)**

Bonds or preferred stock whose interest is paid in the form of additional bonds or preferred stock.

**Prepayment Analysis**

A method that stress tests Collateralized Mortgage Obligations by varying the prepayment assumptions to understand and anticipate how the structure changes in a constantly fluctuating interest rate environment.

**Principal Component Analysis**

A method that measures the movements of the yield curve in terms of three main factors: level, slope, and curvature.

**Ratings**

Various alphabetical and numerical designations used by institutional investors, Wall Street underwriters, and commercial rating companies to give relative indications of bond and note creditworthiness. Standard & Poor's and Fitch use the same system, starting with their highest rating of AAA, AA, A, BBB, BB, B, CCC, CC, C, and D for default. Moody's Investors Services uses Aaa, Aa, A, Baa, Ba, B, Caa, Ca, C, and D. Each of the services use + or - or +1 to indicate half steps in between. The top four grades are considered investment grade ratings.

**Real Return Relationships**

The historical perspective looking at expected returns, less inflation with the expectation that the real return is mean reverting.

**Scenario Analysis**

Projects returns over a number of changing situations (such as interest rates, curve twists, spreads, etc.) and weighs each situation to arrive at an average expected return. This process allows comparisons to varying types of securities and portfolios.

**Security**

Instrument that signifies an ownership position in a corporation (stock), a creditor relationship with a corporation or governmental body (bond), or rights to ownership such as those represented by an option, subscription right, and subscription warrant.

**Senior Investment Officer of Fixed Income**

The senior investment officer is responsible for all fixed income and reports to the chief investment officer of CalPERS.

**Short Duration Fund**

A fund managed by CalPERS staff that is designed to earn a return premium versus traditional short duration assets through a modest increase in portfolio duration and by purchasing a broader universe of short duration securities than those typically available to traditional money market portfolios.

**Short Selling**

Selling securities that are not owned and buying them back later to: 1) take advantage of an anticipated decline in the price; or 2) to protect a profit in a long position.

**Sovereign**

A security issued by a foreign government or government sponsored agency.

**Speculation**

Assumption of risk in anticipation of gain but recognizing a higher than average possibility of loss.

**Split Rated Security**

~~A security that has a different credit classification by two rating agencies. For the purpose of this policy, a security is called a split-rated security, if Standard & Poor's and Moody's report a difference in the ratings.~~

**Standard & Poor's**

A nationally-recognized credit rating agency that grades the investment quality of bonds in a 10-symbol system. The ranges extend from the highest investment quality, which is AAA, to the lowest credit rating, which is D. Securities rated BBB- or greater are considered investment grade. Securities rated BB+ or below are considered speculative.

**Swap**

Private agreement between two companies to exchange cash flows in the future according to a prearranged formula.

**Unleveraged Bank Loans**

Loans made by banks that are typically partially secured by assets and are made to investment grade companies with a debt/EBITDA ratio less than 3.5 and have a spread to LIBOR of less than 250 basis points.

**Watchlist Status**

Indicates a level of concern, the degree of which shall be unique to each situation with the parameters specified in the relevant policy.

**Yankee Bonds**

~~Securities issued in the domestic market by foreign borrowers. Yankee bonds must be issued by companies domiciled in G11 countries, Australia, Ireland, or Scotland, and must be rated at least A3 (Moody's) and A- (Standard & Poor's).~~

**Yield Curve**

Graph showing the term structure of interest rates by plotting the yields of all bonds of the same quality with maturities ranging from the shortest to the longest available.